

REMARKS/ARGUMENTS

Claims 1-31 remain in this application.

Claim 4 has been placed in independent form and is therefore in full condition for allowance as provisionally indicated in the last Office Action. The subject matter from claim 1 that has been incorporated into claim 4 has been amended slightly to change the language "elongated ribs extending generally helically along the length of the roll" to "elongated ribs extending generally helically lengthwise of the roll." In addition, the language "elongated bars extending generally helically along the length of the roll" has been changed to "elongated bars extending generally helically lengthwise of the roll." In all other respects, the subject matter of claim 1 incorporated into claim 4 to make it independent is identical to that previously appearing in claim 1. In view of the allowability of claim 4, claims 5, 6 and 7, which depend from allowable claim 4 and set forth further details of construction not shown or suggested by the art of record, are also in condition for allowance.

Claim 11 has been placed in independent form and is therefore in full condition for allowance as provisionally indicated in the last Office Action. As with claim 4, the incorporated subject matter from claim 1 has been revised slightly to now call for "elongated ribs extending generally helically lengthwise of the roll" and "elongated bars extending generally helically lengthwise of the roll." In all other respects, the incorporated subject matter from claim 1 is identical to that appearing in original claim 1. Claims 12 and 13 depend from allowable claim 11 and set forth further details of construction not shown or suggested by the art of record. Therefore, claims 12 and 13 are also in full condition for allowance.

Claim 21 has been placed in independent form and is therefore in full condition for allowance as provisionally indicated in the last Office Action. Claims 22 and 23 remain dependent upon allowable claim 21 and set forth further details of the invention not shown or suggested by the art of record. Accordingly, claims 22 and 23 are also in full condition for allowance.

Claim 26 has been placed in independent form and is therefore in full condition for allowance as provisionally indicated in the last Office Action. The incorporated subject matter from claim 24 has been revised slightly to call for "intermeshing ribs that extend generally helically lengthwise of the rolls" and for "intermeshing bars that extend generally helically lengthwise of the rear rolls." In all other respects, the subject matter incorporated from claim 24 is identical to that originally appearing in claim 24.

Claim 27 has been placed in independent form and is therefore in full condition for allowance as provisionally indicated in the last Office Action. As with claim 26, the subject matter incorporated from original claim 24 has been revised slightly to call for "intermeshing ribs that extend generally helically lengthwise of the rolls" and "intermeshing bars that extend generally helically lengthwise of the rear rolls." In all other respects, the subject matter incorporated from original claim 24 is identical to that in original claim 24.

Claim 28 has been placed in independent form and is therefore in full condition for allowance as provisionally indicated in the last Office Action. As with claims 26 and 27, the material incorporated from claim 24 has been revised slightly to call for "intermeshing ribs that extend generally helically lengthwise of the rolls" and "intermeshing bars that extend generally helically lengthwise of the rear rolls." In all other respects, the subject matter from claim 24 is identical to that originally appearing in claim 24.

The claims remaining in issue are claims 1-3, 8-10, 14-20, 24-25 and 29-31.

Dealing with the claims in issue in the same order discussed in the Office Action, claims 17-20 presently stand rejected under 35 U.S.C. §102(e) as being anticipated by Holtkotte 6,584,755. This rejection is respectfully traverse for the reasons which follow.

Holtkotte discloses a way of adjusting the contact pressure between the two nip rollers 28 of a kernel cracking mechanism. A hydraulic cylinder 38 squeezes the two rolls 28 toward one another against the return bias of a coil spring 36 that is connected to the upper roller. Although coil spring 36 tends to pull rollers 28 apart, and does separate the rollers when hydraulic cylinder 38 "is separated from the source P" (Column. 2, lines 58-59), there is no positive limit stop for maintaining

a selected gap or space between rollers 28. Thus, there is no way in Holtkotte of adjusting the "squeeze" or "tension" on the rollers 28 at a selected spacing between rollers 28. In other words, Holtkotte does not have the capability of setting the rollers 28 at a certain spacing or gap and then having hydraulic tension applied by cylinder 38 at such selected gap.

Claim 17 has been amended to add the calling for "adjustable stop structure disposed for adjustably limiting relative movement of the rolls of each pair toward one another to present gaps between the rolls." Thus, in the claimed arrangement, the farmer can set the gaps between the rolls at any size he chooses without adversely impacting the tension force provided by the hydraulic tensioning circuit. Such flexibility in adjusting the "running clearance" between the rolls without necessarily changing the hydraulic tension force is highly desirable as it permits the farmer to achieve the best conditioning action for the particular crop type and moisture conditions at hand.

As noted above, Holtkotte fails to disclose "adjustable stop structure disposed for adjustably limiting relative movement of the rolls of each pair toward one another to present gaps between the rolls". Accordingly, the rejection of Holtkotte under 35 U.S.C §102(e) should be reconsidered and removed.

Claims 18, 19 and 20 depend directly and indirectly from allowable claim 17 and set forth further details of the invention not shown or suggested by the art of record. Accordingly, it is respectfully submitted that dependent claims 18, 19 and 20 are also in full condition for allowance.

Independent claims 1, 24 and 29, as well as their respective dependent claims, presently stand rejected under 35 U.S.C. §103(a) as being unpatentable over Cook 6,050,070 in view of Garrett et al. 3,513,645 and Pruitt et al. 6,158,201. This rejection is respectively traversed for the following reasons.

Dealing first with claim 1, this claim is directed to the discovery that significantly improved drying rates and smooth feeding of crop materials can be obtained by using a front pair of rolls having a non-compressible surface with intermeshing ribs and a rear pair of rolls having a compressible surface with intermeshing bars. This beneficial result of improved drying rate coupled with smoother feeding is simply not shown or suggested by the art of record.

Applicants acknowledge Cook's passing remarks that the front feeder roll 83 "may include any pattern or combination of protrusions around its outer surface, such as flow guides or roller protrusions 84, shown in Fig. 16." (Column 9, lines 42-45) Likewise, applicants acknowledge Cook's passing comment that the surface of the rear rollers "may be imparted with any one of a number of different patterns, which may be grooves or raised areas, to achieve a grabbing effect on the crop being conditioned and which may enhance the crushing of the crop as it is conditioned." (Column 4, lines 64-67)

However, these brief, passing remarks certainly do not suggest to one of ordinary skill in the art that significantly improved drying rates and smooth feeding action can be obtained where the front hard surface rolls are given a particular configuration, i.e., intermeshing helical ribs as in Pruitt et al., and the soft surface rear rolls are given a particular configuration, i.e., intermeshing helical bars as in Garrett et al. In other words, while Cook broadly suggests that the hard surface front rolls and the soft surface rear rolls could be of a different configuration than disclosed in his patent, he does not teach or suggest that any specific design will provide improved results. Apparently, he fails to recognize that configuring the front rolls like the rolls in Pruitt et al. and configuring the rear rolls like the rolls in Garrett et al. will provide significantly improved results in terms of drying rate and feeding ease. That benefit is only made apparent when applicants' own disclosure is examined.

Thus, it is respectfully submitted that there is no motivation or suggestion for one skilled in the art to combine the teachings of Cook, Pruitt et al. and Garrett et al. Only in hindsight, when viewing the benefits of applicants' own disclosure, is one skilled in the art provided with a reason for making such a combination. Using applicants' own disclosure against them as a means of piecing together the prior art in a hindsight approach to arrive at applicants' claimed invention is improper in assessing whether a claimed invention would have been obvious to one skilled in the art at the time the invention was made. Accordingly, it is respectfully submitted that the rejection of claim 1 as merely being an obvious combination of Cook, Pruitt et al. and Garrett et al. should be reconsidered and withdrawn.

For the record, it should be noted that claim 1 has been amended slightly in a manner similar to other claims noted earlier to specify that the ribs of the front rolls extend "lengthwise" of the roll and the bars of the rear rolls similarly extend "lengthwise" of the roll.

Claims 2, 3, 8-10 and 14-16 depend directly and indirectly from allowable claim 1 and set forth further details of the invention not shown or suggested by the art of record. Therefore, it is respectfully submitted that these dependent claims are also in full condition for allowance.

The same reasoning applied to claim 1 also applies to method claim 24. While applicants acknowledge Cook's remarks that his metal front rolls and soft rear rolls could be differently configured than what is illustrated in his patent, there is no suggestion that the front rolls should be configured like those in Pruitt et al. and the rear rolls should be configured like those in Garret et al. Cook provides no motivation for one skilled in the art to make the front rolls like Pruitt et al. and the rear rolls like Garrett et al. It is not until applicants' own disclosure is examined that one skilled in the art is provided with the suggestion that configuring the front and rear rolls in the particular manner claimed in method claim 24 will yield significantly improved drying rates and smooth feeding.

Accordingly, it is respectfully submitted that claim 24 contains patentable subject matter and that the rejection thereof should be reconsidered and withdrawn. As with claim 1, claim 24 has been amended slightly to specify that the intermeshing ribs of the front rolls extend generally helically "lengthwise" of the rolls and the intermeshing bars of the rear rolls extend generally helically "lengthwise" of the rear rolls.

Method claim 25 specifies that the tension on the rear rolls can be set higher than, lower than or substantially the same as the tension on the front rolls. This method step is simply not shown or suggested by the art of record. Moreover, claim 25 depends from allowable claim 24 and is therefore in condition for allowance for this reason as well.

Apparatus claim 29, among other things, calls for the front non-compressible surface rolls and the rear compressible surface rolls to be provided with adjustable stop structure for limiting relative movement of the rolls of each pair toward one another. Furthermore, claim 29 calls for

tension mechanism operably coupled with the front and rear pairs of rolls in a manner to yieldably bias the rolls of each pair against said stop structure.

The only stop structure disclosed in the Cook reference is a temporary stop 77 used in connection with the two roller configuration of Fig. 5. As explained at Column 7, lines 20-22, Cook indicates "a stop 77 may be used to temporarily separate the two rollers to allow debris and slugs to pass through."

Thus, stop 77 is only a temporary stop. Moreover, Cook fails to show stops in connection with both a front set of rolls and a rear set of rolls.

Accordingly, it is respectfully submitted that claim 29 sets forth patentable subject matter not shown or suggested by the art of record. Reconsideration and removal of the rejection of this claim is therefore respectfully requested.

Claims 30 and 31 depend directly and indirectly from allowable claim 29 and set forth further details of the invention not shown or suggested by the art of record. Accordingly, it is respectfully submitted that these dependent claims are also in full condition for allowance.

In view of the foregoing, it is respectfully submitted that all claims in this application are in full condition for allowance. Forwarding of formal notice of such allowance is respectfully requested.

Appl. No. 10/716,834
Amdt. dated December 7, 2004
Reply to Office Action of September 7, 2004

Enclosed herewith is a check in the amount of \$528.00 covering the new independent claims in this application. Any additional fee which might be due in connection with this application should be applied against our Deposit Account No. 19-0522.

Respectfully submitted,

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(Docket No. 33059)